

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 26 APR 1926

Date of writing Report 20th April 1926, When handed in at Local Office 19 Port of HAMBURG

No. in Survey held at KIEL Date, First Survey 18th February Last Survey 14th April 1926
Reg. Book. (Number of Visits 15)

38524 on the Steel Twin Sc. Motor V. "CANADOLITE" Tons { Gross 11309
Net 6668

Built at KIEL By whom built FRIED. TRUPP. GERMANY Yard No. 481 When built 1926

Owners IMPERIAL OIL LD. Port belonging to TORONTO

Electric Light Installation fitted by FRIED. TRUPP. GERMANY WERFT. Contract No. - When fitted 1926

System of Distribution 2 wire - 2 conductor insulated with separate conductors - except small cables ✓

Pressure of supply for Lighting 110 ✓ volts, Heating 220 ✓ volts, Power 220 ✓ volts.

Direct or Alternating Current, Lighting Direct Current ✓ Power Direct Current ✓

If alternating current system, state frequency of periods per second ✓

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off ✓

Generators, do they comply with the requirements regarding rating ✓, are they compound wound ✓

are they over compounded 5 per cent. ✓, if not compound wound state distance between each generator ✓

Where more than one generator is fitted are they arranged to run in parallel ✓, is an adjustable regulating resistance fitted in series with each shunt field ✓

Are all terminals accessible, clearly marked, and furnished with sockets ✓, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched ✓

Are the lubricating arrangements of the generators as per Rule ✓

Position of Generators Engine room, steam driven emergency set in shelter deck aft. 26. in separate room.

is the ventilation in way of the generators satisfactory ✓, are they clear of all inflammable material ✓

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators ✓

and ✓, are the generators protected from mechanical injury and damage from water, steam or oil ✓

are their axes of rotation fore and aft ✓, with the exception of the steam driven emergency set

Earthing, are the bedplates and frames of the generating plant efficiently earthed ✓ are the prime movers and their respective generators in metallic contact ✓

Main Switch Boards, where placed Engine room forward on elevated platform, emergency close to set.

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard ✓

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes ✓

are they protected from mechanical injury and damage from water, steam or oil ✓, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards ✓

and ✓, are they constructed wholly of durable, non-ignitable non-absorbent materials ✓, is all insulation of high dielectric strength and of permanently high insulation resistance ✓

if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework ✓

and is the frame effectively earthed ✓. Are the fittings as per Rule regarding: - spacing or shielding of live parts

✓, accessibility of all parts ✓, absence of fuses on back of board ✓, proportion of omnibus bars ✓

✓, individual fuses to voltmeter, pilot or earth lamp ✓, connections of switches ✓

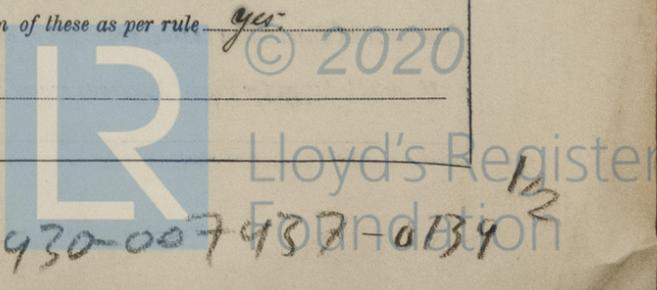
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches For each generator: 4 double pole circuit breaker with overload and reversed current trips interlocked by equalizer switch. For each outgoing circuit: A fuse on each pole and a single pole switch on one pole.

Instruments on main switchboard 4 ammeters 1 voltmeters 3 synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Ohm meter and lamp alarm arrangement

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules ✓

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule ✓



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small section *The German Standards have been applied*

Cables: Single, twin, concentric, or multicore *single wire* are the cables insulated and protected as per Tables IV or V of the Rules. *Generally*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *about 5% for power - 3% for light*

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *yes*

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *no paper insulated cables*

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage *yes*

Support and Protection of Cables, state how the cables are supported and protected *armoured cables stipped and in troughs*

If cables are run in wood casings, are the casings and caps secured by screws *yes*, are the cap screws of brass *yes*, are the cables run in separate grooves *yes*. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII *yes*

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *yes*

Joints in Cables, state if any, and how made, insulated, and protected *water-tight joint lower*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *yes*

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *yes* state the material of which the bushes are made

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *yes* are their connections made as per Rule *yes*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule *yes*

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *small diesel driven with hand starting arrangement dynamo in engine room, two sets. Steam driven in Galley deck in separate room aft.*

Navigation Lamps, are these separately wired *yes*, controlled by separate switch and separate fuses *yes*, are the fuses double pole *yes*, are the switches and fuses grouped in a position accessible only to the officers on watch *yes*, has each navigation lamp an automatic indicator as per Rule *yes*

Secondary Batteries, are they constructed and fitted as per Rule *yes*

Fittings, are all fittings on weather decks, in storerooms and engine rooms and wherever exposed to drip or condensed moisture, watertight *yes* are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected *yes* are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *yes, gas light fittings lamps protected by stout glass, lower gas light tubing*, how are the cables led *double-pole switch on deck outside the spaces*

Searchlight Lamps, No. of *2*, whether fixed or portable *portable*, are their fittings as per Rule *yes*

Arc Lamps, other than searchlight lamps, No. of *1*, are their live parts insulated from the frame or case *yes*, are their fittings as per Rule *yes*

Motors, are their working parts readily accessible *yes*, are the coils self-contained and readily removable for replacement *yes*, are the brushes, brush holders, terminals and lubricating arrangements as per Rule *yes*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *yes*, are they protected from mechanical injury and damage from water, steam or oil *yes*, are their axes of rotation fore and aft *yes*, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type *yes*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *yes* and *yes*

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule *yes*

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule *Steel mast*

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings *yes*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *yes*

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No of	RATED AT			Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.			Fuel Used.	Flash Point of Fuel.
MAIN	2	100	230	435	275	2 cyl. 4 1/2 c. S.A. Diesel engine.	Diesel Gas Oil	170° F.
AUXILIARY	1	60	280	260	360	3 cyl.		
EMERGENCY	1	17	230	74	370	2 cyl. 1 1/2 in engine		
ROTARY TRANSFORMER	1	9	220	43	500	3 cyl. Diesel. hand start. arrange.		
TRANSFORMER	2	115	115	130	2000	2 cyl. motor 17 H.P. 220 V. 92.7.	2000 rev. per minute	
		0.2	120	1.2	2300	0.45 x 230 V. 4.	2000	

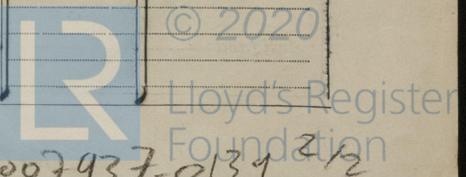
LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. In.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return). Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	4	95	19	2.54	235	164		
	EQUALISER CONNECTIONS	1	120	37	2.05				
	AUXILIARY GENERATOR	4	95	19	2.5	260	164		
	EMERGENCY GENERATOR	3	35	19	1.55	74	30		
	ROTARY TRANSFORMER	2	70	19	2.5	130	20		
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	8	4	1	2.25	40	30 to 700		
	BOILER ROOM								
	ACCOMMODATION								
	Upper deck.	6	4	1	2.25	30	40		
	Lower deck.	8	4	1	2.25	50	50		
	Bridge deck.	6	4	1	2.25	48	140		
	Control lamp.	2	4	1	2.25	5	160	rubber	lead covered and armoured.
	Siphon	2	1.5	1	1.4	2	130		
	WIRELESS	2	6	1	2.75	12	135		
	SEARCHLIGHT	2	10	7	1.35	25	365		
	MASTHEAD LIGHT	2	2.5	1	1.8	0.5	F. 110-177-150		
	SIDE LIGHTS	2	2.5	1	1.8	0.5	30		
	COMPASS LIGHTS	2	1.5	1	1.4	0.5	48		
	POOP LIGHTS	2	1.5	1	1.4	0.5	220		
	CARGO LIGHTS	2	2.5	1	1.8	3	100		
	ARC LAMPS								
	HEATERS	2	95	19	2.5	150	70 to 240		

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. In.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return). Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	25	7	2.17	64	36		
	MAIN BILGE LINE PUMPS	2	25	7	2.17	60	32		
	GENERAL SERVICE PUMP								
	Emergency Bilge Pump	1	6	1	2.75	20	28		
	SANITARY PUMP	1	25	7	2.17	72	32		
	CIRC. SEA WATER PUMPS	1	50	19	1.85	97	16		
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR	2	16	7	1.7	48.5	56		
	FRESH WATER PUMP	1	1.5	1	1.4	8.2	42		
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR	3	70	19	2.15	134	530		
	LUBRICATING OIL PUMPS	1	16	7	1.7	47	68	rubber	lead covered and armoured.
	OIL FUEL TRANSFER PUMP	2	2.5	1	1.8	12	76		
	WINDLASS	1	240	61	2.5	340	370		
	WINCHES, FORWARD	2	25	19	1.55	96.5	150-300		
	WINCHES, AFT								
	STEERING GEAR - Pump								
	(a) MOTOR GENERATOR	2	50	19	1.85	107	160		
	(b) MAIN MOTOR	2	4	1	2.25	12	32-36		
	WORKSHOP MOTOR								
	VENTILATING FANS	1	2.5	1	1.8	6.8	32		
	Lubric. oil purifier	1	2.5	1	1.8	6.5	38		
	Fan for W.T. Sinky Power	2	4	1	2.25	8	30		
	Leaky	1	1.5	1	1.4	4	16		
	Delivery pump. Motor	1	2.5	1	1.85	9.2	25		
	Drum pump	2	2.5	1	1.8	16.5	6		
	Control lamp. of Refrig.	1	2.5	1	1.8	8.6	4		
	Heavy oil fuel transfer p.	2	2.5	1	1.8	12	30		
	Separator	2	2.5	1	1.8	10.9	40		
	Forming machine	1	2.5	1	1.8	7.5	76		

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All Conductors are of annealed copper conforming to British Standard Specification No. 7.
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
 The foregoing is a correct description.

The Builders are the Electrical Engineers. Date 20/4/26

COMPASSES.

Distance between electric ~~generators~~ or motors and standard compass } About 15 m.
 Distance between electric ~~generators~~ or motors and steering compass }
 The nearest cables to the compasses are as follows:—
 A cable carrying 0.5 Ampères close to feet from standard compass close to feet from steering compass.
 A cable carrying 0 Ampères 0 feet from standard compass 0 feet from steering compass.
 A cable carrying 0 Ampères 0 feet from standard compass 0 feet from steering compass.
 Have the compasses been adjusted with and without the electric installation at work at full power with
 Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted yes
 The maximum deviation due to electric currents was found to be nil degrees on 0 course in the case of the standard compass, and nil degrees on 0 course in the case of the steering compass.

**FRIED. KRUPP
 GERMANIA WERKE**
 Aktiengesellschaft

Builder's Signature. Date 20/4/26

Is this installation a duplicate of a previous case yes. If so, state name of vessel 'MONTROLITE'

General Remarks (State quality of workmanship, opinions as to class, &c. Workmanship and material of this)

Electric Installation are of good quality. As the conductors used are of the "German Standard" the Society's Rules respecting conductors have been applied generally. The installation has been fitted in accordance with the approved plan, the Secretary's letters and otherwise in conformity with the requirements of the Rules under Special Survey and is eligible in my opinion for record of 'ELECT. LIGHT'

It is submitted that this vessel is eligible for THE RECORD. Elec. light.

Friedrich Hill
27/4/26

Total Capacity of Generators 286 Kilowatts.

The amount of Fee ... £ 38 : 13 : 21 April 1926
 Travelling Expenses (if any) £ : : 14/5/26

Friedrich Hill
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 30 APR 1926

Assigned Elec. Light

Im. 1. 26.—Transfer. (The Surveys are requested not to write on or below the space for Committee's Minute.)



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